Attachment A
BMP Detail Information

BMP Details

Unless otherwise noted, the following BMPs are included in the HDOT Construction Best Management Practices Field Manual.

Pollutant Source as Identified in Section C.11(b)	***Appropriate Site-Specific BMP to be Implemented***	***HDOT Construction BMP Field Manual Section***
Construction debris, green waste, general litter	*Separate contaminated clean up materials from construction and demolition (C&D) wastes. Inspect construction waste and recycling areas regularly. Schedule solid waste collection regularly. Schedule recycling activities based on construction/demolition phases. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. See Solid Waste Management Section SM-6 for additional requirements.*	*See Solid Waste Management Section SM-6. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.* *The Contractor's Litter Management Plan will be accepted by HDOT and included in the SSCBMP Plan once the Contract is awarded.*
Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage	*Use off-site wash racks, repair and maintenance facilities, and fueling sites when practical. Designate bermed wash area if cleaning on site is necessary. Place drip pans or drop cloths under vehicles to absorb spills or leaks. Provide an ample supply of readily available spill cleanup materials. Inspect on-site vehicles and equipment regularly and immediately repair leaks. Regularly inspect fueling areas and storage tanks. Train employees on proper maintenance and spill practices and procedures and fueling and cleanup procedures. Do not remove original product labels. Dispose of containers only after all the product has been used. See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13 and Material Use Section SM-3 for additional requirements.*	*See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13 and Material Use Section SM-3.*
Soil erosion from the disturbed areas	*Provide Soil Stabilization, Storm Drain Inlet Protection SC-2, Perimeter Controls and Sediment Barriers, Paving Operations SM-19, Controlling Storm Water Flowing Onto and Through the Project, and Non-Structural BMPs*	*Soil Stabilization* 1. *SM-21 Topsoil Management* 2. *EC-5 Seeding and Planting* 3. *EC-6 Mulching*

Pollutant Source as Identified in Section C.11(b)	*Appropriate Site-Specific BMP to be Implemented*	*HDOT Construction BMP Field Manual Section*
	(Employee Training SM-1, Scheduling SM-14, Location of Potential Sources of Sediment SM-15, Preservation of Existing Vegetation SM-16) .	4. *EC-7 Geotextiles and Mats* *SC-2 Storm Drain Inlet Protection* *Perimeter Controls and Sediment Barriers* 1. *SC-1 Silt Fence* 2. *SC-5 Vegetated Filter Strips and Buffers* 3. *SC-8 Compost Filter Berm* 4. *SC-13 Sandbag Barrier* 5. *SC-14 Brush or Rock Filter* *SM-19 Paving Operations* *Controlling Storm Water Flowing onto and Through the Project* 1. *EC-8 Run-On Diversion* 2. *SC-6 Earth Dike* 3. *SC-7 Temporary Drains and Swales* *Non-Structural BMPs* 1. *SM-1 Employee Training* 2. *SM-14 Scheduling* 3. *SM-15 Location of Potential Sources of Sediment* 4. *SM-16 Preservation of Existing Vegetation*
Sediment from soil stockpiles	*Locate stockpiles a minimum of 50 feet from concentrated runoff. Place bagged materials on pallets and under cover. Provide physical diversion to protect stockpiles from concentrated*	*See Protection of Stockpiles Section SM-4. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls*

Pollutant Source as Identified in Section C.11(b)	*Appropriate Site-Specific BMP to be Implemented*	*HDOT Construction BMP Field Manual Section*
	runoff. Cover stockpiles with plastic or comparable material prior to a rain event during the rainy season. Place silt fence, fiber filtration tubes, or straw wattles around stockpiles. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. See Protection of Stockpiles Section SM-4 for additional requirements.	*where applicable.*
Emulsified asphalt or prime/tack coat	*Provide training for employees and contractors on proper material delivery and storage practices and procedures. Restrict paving operations during wet weather to prevent contact between storm water and paving materials. Use asphalt emulsions as prime coat when possible. Place geotextile filter fabric over drain inlet structures and manholes during application of tack coat, seal coat, slurry seal, and fog seal. Keep ample supplies of drip pans and absorbent materials on site. Inspect inlet protection equipment. See Material Delivery and Storage Section SM-2 and Paving Operations Section SM-19 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.*	*See Material Delivery and Storage Section SM-2, Paving Operations Section SM-19, Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.*
Materials associated with painting, such as paint and paint wash solvent	*Hazardous chemicals shall be well-labeled and stored in original containers. Keep ample supply of cleanup materials on site. Dispose container only after all of the product has been used. Remove as much paint from brushes on painted surface. Rinse from water-based paints shall be discharged into the sanitary sewer system. Filter and re-use solvents and thinners. Dispose of oil-based paints and residue as a hazardous waste. Ensure collection, removal, and disposal of hazardous waste complies with regulations. Immediately clean up spills and leaks. Properly store paints, solvents, and epoxy compounds. Properly store and dispose waste materials generated from painting and structure repair and*	*See Material Delivery and Storage Section SM-2, Material Use Section SM-3, Hazardous Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-20, Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.*

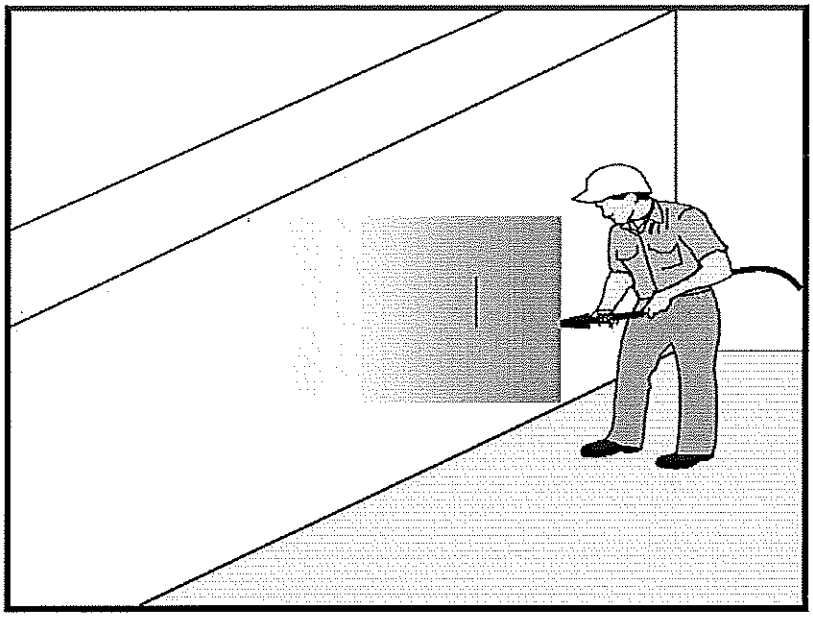
Pollutant Source as Identified in Section C.11(b)	*Appropriate Site-Specific BMP to be Implemented*	*HDOT Construction BMP Field Manual Section*
	construction activities. Mix paints in a covered and contained area when possible to minimize adverse impacts from spills. See Material Delivery and Storage Section SM-2, Material Use SM-3, Waste Management, Hazardous Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-20 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.	
Industrial chemicals, fertilizers, and/or pesticides	*Hazardous chemicals shall be well-labeled and stored in original containers. Keep ample supply of cleanup materials on site. Dispose container only after all of the product has been used. Retain a complete set of material safety data sheets on site. Store materials under cover during the rainy season or if rain is forecasted. Store chemicals, drum, and bagged materials on a pallet and when possible, under cover in secondary containment. Restrict amount of herbicide prepared to quantity necessary for the current application. Do not apply herbicides during or just before a rain event. Comply with the recommended usage instructions. Avoid disposal of toxic liquid wastes (solvents, used oils, and paints) or chemicals (additives, acids, and curing compounds) in dumpsters allocated for construction debris. Ensure collection, removal, and disposal of hazardous waste complies with regulations. Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler. See Material Delivery and Storage Section SM-2, Material Use SM-3, and Waste Management, Hazardous Waste Management Section SM-9 for additional requirements.*	*See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9*
Hazardous waste (Batteries,	*Do not dispose of toxic materials in dumpsters*	*See Hazardous Waste*

Pollutant Source as Identified in Section C.11(b)	*Appropriate Site-Specific BMP to be Implemented*	*HDOT Construction BMP Field Manual Section*
Solvents, Treated Lumber, etc.)	*allocated for construction debris. Ensure collection, removal, and disposal of hazardous waste complies with regulations. Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler. Segregate and recycle wastes from vehicle/equipment maintenance activities such as used oil or oil filters, greases, cleaning solutions, antifreeze, automotive batteries, and hydraulic and transmission fluids. See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Management, Vehicle and Equipment Maintenance SM-12 for additional requirements.*	*Management Section SM-9 and Vehicle and Vehicle and Equipment Maintenance SM-12*
Metals	*Inspect construction waste and recycling areas regularly. Schedule solid waste collection regularly. If metals are stored on site (such as rebar or galvanized poles) store under cover under tarps or in containers. Minimize the amount of material stored on site. Do not stockpile metals in close proximity to discharge points. See Solid Waste Management Section SM-6 for additional requirements.*	*See Solid Waste Management Section SM-6*
Existing Pollution Sources from Section C.2	*Pollution not associated with construction activities are addressed under the Contractor's Litter Management Plan within the Contractor's work area.*	*The Contractor's Litter Management Plan will be accepted by HDOT and included in the SSCBMP Plan once the Contract is awarded.*
Dust Control Water	*Do not over spray water for dust control purposes which will result in runoff from the area. Apply water as conditions require. Washing down of debris or dirt into drainage or sewage systems, or State waters will not be allowed. See Dust Control Section SM-18 for additional requirements.*	*See Dust Control Section SM-18*
Concrete Truck Wash Water	*Wash concrete-coated vehicles or equipment off-site or in the designated wash area. Locate on-site wash area a minimum of 50 feet away from*	*See Waste Management, Concrete Waste Management Section SM-5*

Pollutant Source as Identified in Section C.11(b)	*Appropriate Site-Specific BMP to be Implemented*	*HDOT Construction BMP Field Manual Section*
	storm drain inlets, open drainage facilities, or water bodies. Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set. The temporary pit shall be lined with plastic to prevent seepage of wash water into the ground. Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin. See Waste Management, Concrete Waste Management Section SM-5 for additional requirements.	
Construction Exit Wash Water	*A sediment trapping device is required if a wash rack is used in conjunction with the stabilized construction entrance/exit. The pavement shall not be cleaned by washing down the street. If sweeping is ineffective or it is necessary to wash the streets, wash water must be contained either by construction of a sump, diverting the water to an acceptable disposal area, or vacuuming the wash water. Use BMPs for adjacent drainage structures. See Stabilized Construction Entrance Section EC-2 for additional requirements.*	*See Stabilized Construction Entrance Section EC-2*
Irrigation Water	*Consider irrigation requirements. Avoid species which require irrigation where possible. Design timing and application methods of irrigation water to eliminate the runoff of excess irrigation water into the storm water drainage system. See Seeding and Planting Section EC-5 and California Stormwater BMP Handbook SD-12 Efficient Irrigation included in Attachment A-9 for additional requirements.*	*See Seeding and Planting Section EC-5 and California Stormwater BMP Handbook SD-12 Efficient Irrigation included in Attachment A-7*
Saw-cutting Slurry	*Saw cut slurry shall be removed from the site by vacuuming. Provide storm drain protection during saw cutting. See Paving Operations Section SM-19 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.*	*See Paving Operations Section SM-19, Storm Drain Inlet Protection SC-2, Perimeter sediment controls where applicable*

Pollutant Source as Identified in Section C.11(b)	*Appropriate Site-Specific BMP to be Implemented*	*HDOT Construction BMP Field Manual Section*
Concrete Curing Water	*Avoid overspray of curing compounds. Apply an amount of compound that covers the surface, but does not allow any runoff of the compound. See California Stormwater BMP Handbook NS-12 Concrete Curing included in Attachment A-9 for additional requirements.*	*See California Stormwater BMP Handbook NS-12 Concrete Curing included in Attachment A-7*
Water-Jet Wash Water	*For Water-Jet Wash Water used to clean vehicles, use off site wash racks or commercial washing facilities when practical. If on site cleaning is necessary, designate bermed wash areas for cleaning activities. See Vehicle and Equipment Cleaning Section SM-11 for additional information. For Water-Jet Wash Water used to clean impervious surfaces, the runoff shall not be allowed to flow into drainage structures or State Waters.*	*See Vehicle and Equipment Cleaning Section SM-11*
Sanitary/Septic Waste	*Locate Sanitary facilities in a convenient place away from drainage facilities, Untreated Wastewater shall not be discharged to the ground or buried. A licensed service provider shall maintain sanitary/septic facilities in good working order. Schedule regular waste collection by a licensed transporter. See Sanitary/Septic Waste Section SM-7 for additional requirements.*	*See Sanitary/Septic Waste Section SM-7. Additional information will be provided by the Contractor for HDOT acceptance and inclusion/submittal at least 30 days prior to the start of construction.*

Concrete Curing NS-12



Objectives

EC	Erosion Control	
SE	Sediment Control	
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	☑

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	☑
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

Description and Purpose

Concrete curing is used in the construction of structures such as bridges, retaining walls, pump houses, large slabs, and structured foundations. Concrete curing includes the use of both chemical and water methods. Discharges of stormwater and non-stormwater exposed to concrete during curing may have a high pH and may contain chemicals, metals, and fines. Proper procedures reduce or eliminate the contamination of stormwater runoff during concrete curing.

Suitable Applications

Suitable applications include all projects where Portland Cement Concrete (PCC) and concrete curing chemicals are placed where they can be exposed to rainfall, runoff from other areas, or where runoff from the PCC will leave the site.

Limitations

None identified.

Implementation

Chemical Curing

- Avoid over spray of curing compounds.
- Minimize the drift of chemical cure as much as possible by applying the curing compound close to the concrete surface. Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.

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- Use proper storage and handling techniques for concrete curing compounds. Refer to WM-1, Material Delivery and Storage.
- Protect drain inlets prior to the application of curing compounds.
- Refer to WM-4, Spill Prevention and Control.

Water Curing for Bridge Decks, Retaining Walls, and other Structures

- Direct cure water away from inlets and watercourses to collection areas for infiltration or other means of removal in accordance with all applicable permits.
- Collect cure water at the top of slopes and transport or dispose of water in a non-erodible manner. See EC-9 Earth Dikes and Drainage Swales, EC-10, Velocity Dissipation Devices, and EC-11, Slope Drains.
- Utilize wet blankets or a similar method that maintains moisture while minimizing the use and possible discharge of water.

Costs

All of the above measures are generally low cost.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Ensure that employees and subcontractors implement appropriate measures for storage, handling, and use of curing compounds.
- Inspect cure containers and spraying equipment for leaks.

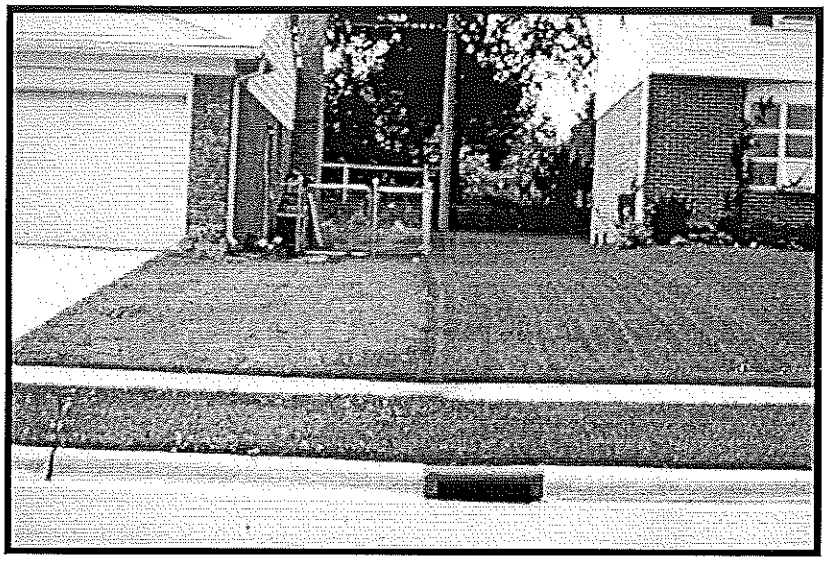
References

Blue Print for a Clean Bay-Construction-Related Industries: Best Management Practices for Stormwater Pollution Prevention; Santa Clara Valley Non Point Source Pollution Control Program, 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to eliminate the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

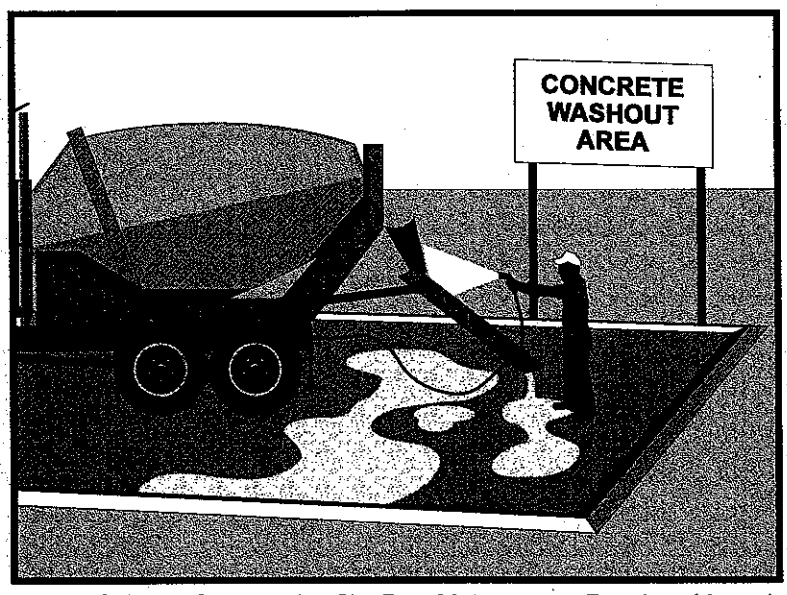
A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Concrete Waste Management SM-5



Source: Caltrans Construction Site Best Management Practices Manual, 2003.

Description

Practices and procedures to prevent or reduce the discharge of concrete waste to the drainage system or adjacent water bodies.

Applications

- Projects involving use of concrete as a construction material or demolition activities generating concrete dust and debris.
- On-site wash areas used for concrete-coated vehicles or equipment.
- Activities such as sawcutting and grinding which result in the formation of slurries containing portland cement concrete or asphalt concrete.

Installation and Implementation Requirements

- Properly store concrete materials away from runoff and under cover.
- Avoid mixing excess concrete, if possible. Discard excess concrete in the designated area.
- Wash concrete-coated vehicles or equipment off-site or in the designated wash area. Locate on-site concrete wash area a minimum of 50 feet away from storm drain inlets, open drainage facilities, or water bodies. Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set.
- Temporary pit shall be lined with plastic to prevent seepage of the wash water into the ground. Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin.

Installation and Implementation Requirements (Continued)

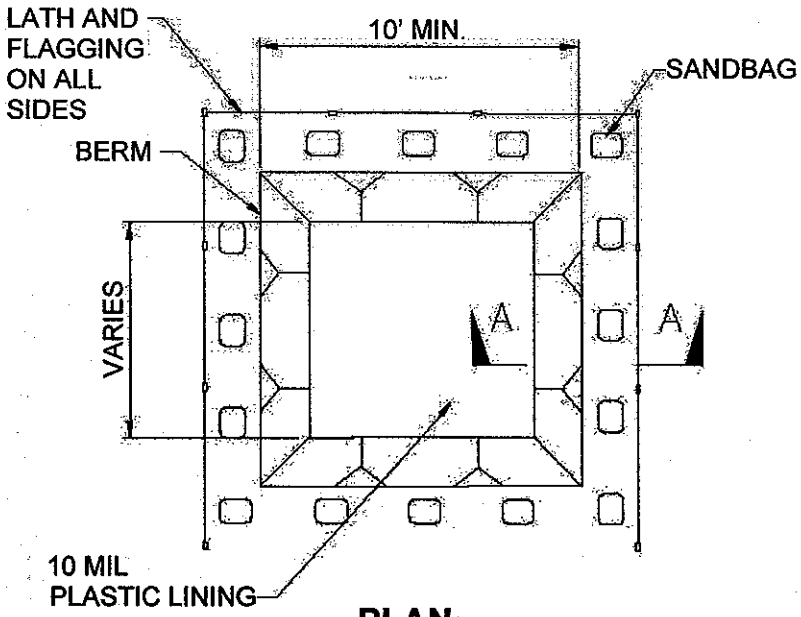
- Break up and properly dispose of hardened concrete from wash area.
- Collect and properly dispose of aggregate concrete sweepings.
- Provide concrete waste management training for employees and contractors.

Limitations

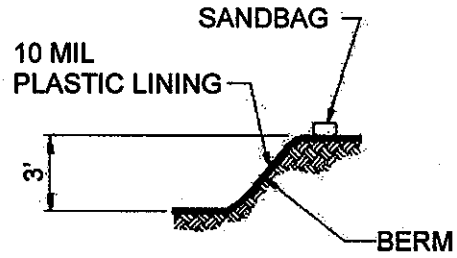
Off-site concrete wash areas may be impracticable.

Inspections and Maintenance

- Inspect concrete wash areas for damage and repair as necessary.
- Regularly remove and dispose hardened concrete.
- Monitor contractors to ensure proper concrete waste management measures are implemented.



PLAN
NTS



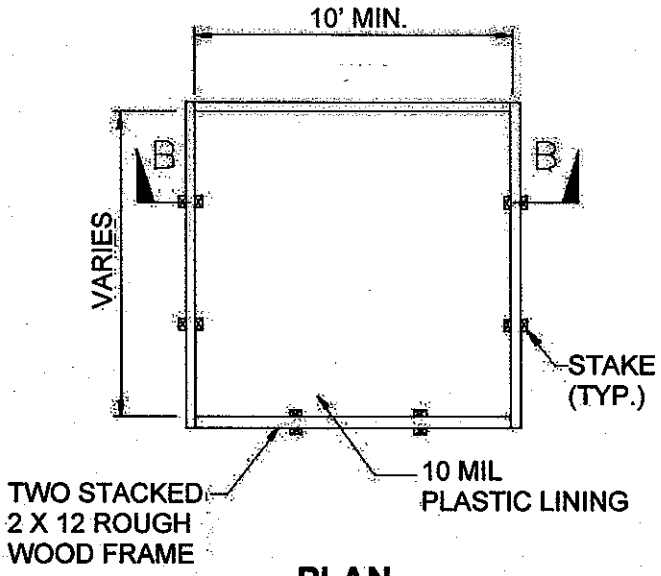
SECTION A-A
NTS

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

WASH AREA (BELOW GRADE)

Source: Caltrans Construction Site Best Management Practices Manual, 2003.



PLAN
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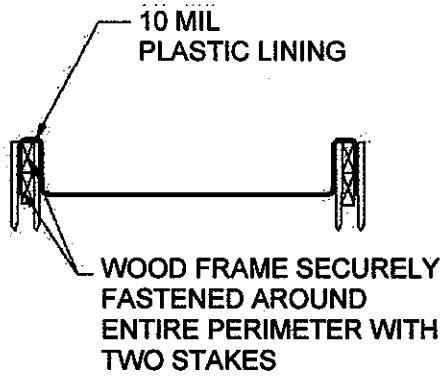


SECTION A-A
NTS

NOTES:

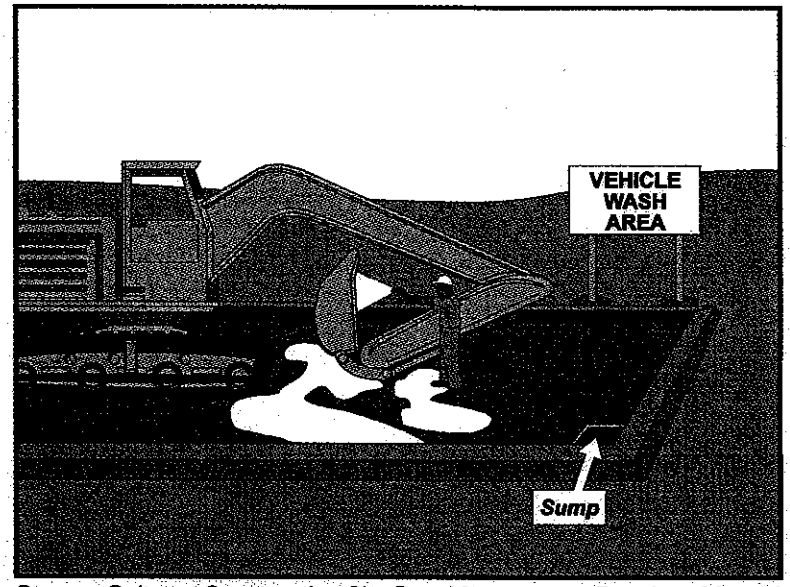
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

WASH AREA (ABOVE GRADE)

Source: Caltrans Construction Site Best Management Practices Manual, 2003.

Vehicle and Equipment Cleaning

SM-11



Source: Caltrans Construction Site Best Management Practices Manual, 2003.

Description

Practices and procedures to reduce or prevent the discharge of pollutants from vehicle and equipment cleaning activities to storm drain.

Applications

Construction or maintenance activities involving cleaning of vehicles and equipment.

Installation and Implementation Requirements

- Use off-site vehicle wash racks or commercial washing facilities when practical. Off-site cleaning facilities may be better equipped to properly handle and dispose of wash waters.
- If on-site cleaning is necessary, designate bermed wash areas for cleaning activities. The wash area may be sloped to facilitate collection of wash water and evaporative drying.
- Minimize water use to avoid the need for erosion and sediment controls for the wash area.
- Use phosphate-free, biodegradable soaps.
- Train employees on pollution prevention measures.
- Steam cleaning shall not occur in uncontained areas. Significant pollutant concentrations may be generated from steam cleaning.

Limitations

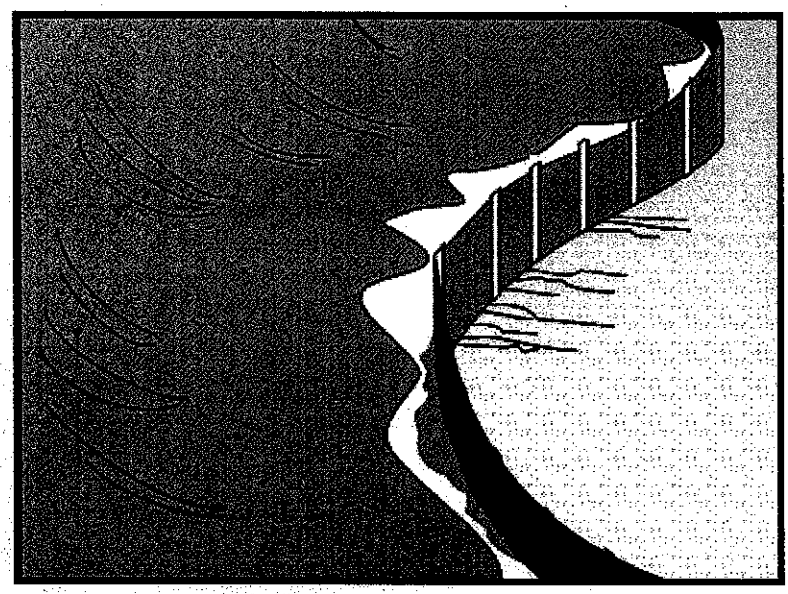
Some soaps labeled phosphate-free and/or biodegradable have been shown to be toxic to fish before the soap degrades. Do not discharge wash water directly into streams.

Inspections and Maintenance

- Train employees on implementation of revised procedures.
- Inspect and maintain structural controls.

Silt Fence or Filter Fabric Fence

SC-1



Source: Caltrans Construction Site Best Management Practices Manual, 2003.

Description

A sediment barrier composed of permeable geotextile filter fabric attached to supporting posts. Wire fencing may provide additional support. The silt fence intercepts the flow of sediment laden runoff, which filters the water and traps the sediment.

Applications

- Along the site perimeter.
- Around temporary stockpiles.
- Along streams and channels.
- Below the toe of cleared or erodible slopes.
- Downslope of exposed soil areas.

Installation and Implementation Requirements

- Primarily use where sheet flow occurs.
- Install silt fence along or parallel to contours.
- Ends of silt fence shall be turned uphill and the geotextiles should be overlapped.
- Silt fence posts shall be driven 14 inches minimum into the trench (see silt fence detail) and the geotextile filter fabric shall be embedded a minimum of 6 inches vertically into the ground or install according to manufacturer's recommendation.

Limitations

- Avoid installing silt fence on slope. However if silt fence is placed on slope, fence posts may need additional embedment.
- Do not install in streams, channels, or areas of concentrated flow.
- Do not use to divert flow.

Silt Fence or Filter Fabric Fence

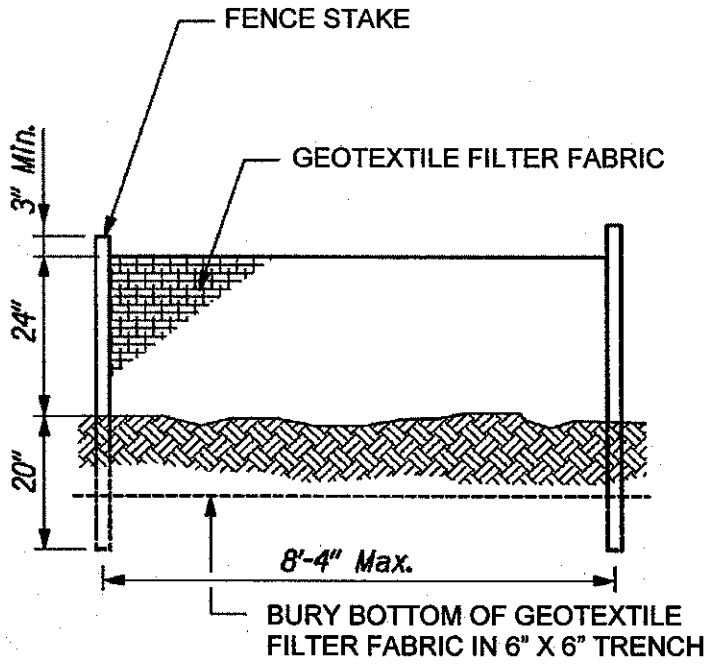
SC-1

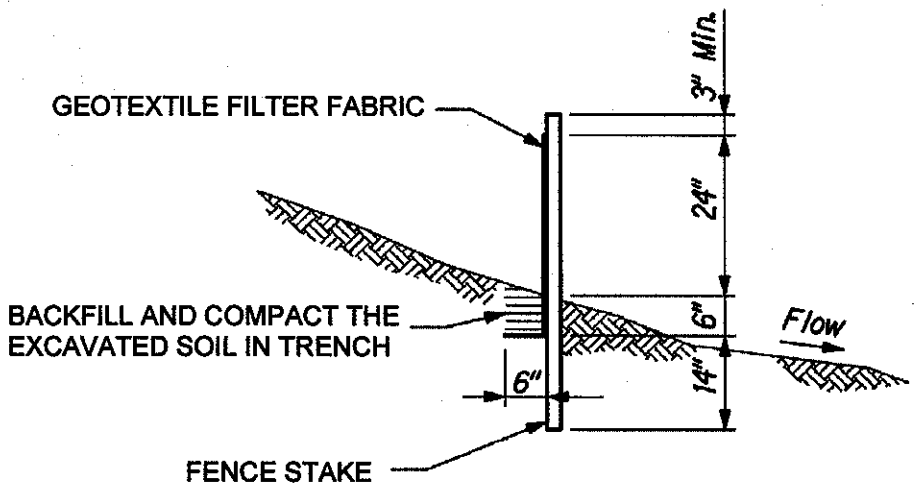
Inspections and Maintenance

- Inspect weekly during dry periods as well as within 24 hours of any rainfall of 0.5 inch or greater which occurs in a 24-hour period and daily during periods of prolonged rainfall.
- Repair or replace damaged fence or posts.
- Remove accumulated sediment when depth reaches 1/3 the barrier height.

Silt Fence or Filter Fabric Fence

SC-1





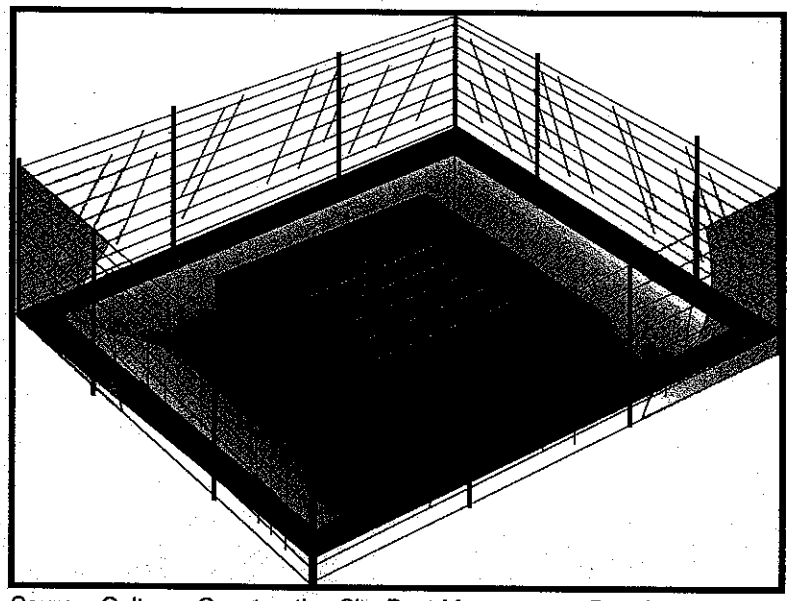
NOTES:

1. THE FILTER FABRIC SHALL BE A MINIMUM OF 36 INCHES WIDE.
2. IF SILT FENCE IS OBTAINED FROM MANUFACTURER AS A PACKAGE (I.E. FABRIC ATTACHED TO POST) THE MANUFACTURER'S INSTALLATION INSTRUCTION SHALL BE ADHERED TO.
3. FENCE STAKES MAY BE WOOD OR METAL, MUST BE CAPABLE OF SUPPORTING ANTICIPATED LOADS.

SILT FENCE
NTS

Source: Water Pollution and Erosion Control Details, Fort Weaver Road Widening Vicinity of Aawa Drive to Geiger Road, Depart of Transportation Highways Division, 2007.

Storm Drain Inlet Protection SC-2



Source: Caltrans Construction Site Best Management Practices Manual, 2003.

Description

Devices installed at storm drain inlets to detain and/or filter sediment-laden runoff. These devices trap and prevent sediment from entering into the storm drain system.

Applications

Every storm drain inlet that may intercept sediment-laden runoff shall be covered or protected.

Installation and Implementation Requirements

- Five types of inlet protection are described below.
  - Geotextile Filter Fabric Fence: Applicable to drainage basins less than one acre and with less than a 5 percent slope.
  - Block and Stone Filter: Applicable to flows exceeding 0.5 cfs.
  - Stone and Wire Mesh Filter: Applicable to curb or drop inlets subjected to traffic from construction equipment.
  - Sandbag Barrier: Applicable to sloped, paved streets; creates a small sediment trap upstream of inlets.
  - Excavated Drop Inlet Sediment Trap: Applicable to areas requiring overflow capability due to expected high flows; an excavated area around the inlet which detains runoff and allows sediment to settle.
- In addition to the methods of inlet protection described above, there are other effective methods and proprietary devices, which may also be used.
- Limit to drainage areas less than one acre, unless a sediment trap intercepts the runoff prior to the inlet protection device.
- Provide an area for water to pond around inlet without flooding nearby structures and property.

Installation and Implementation Requirements (Continued)

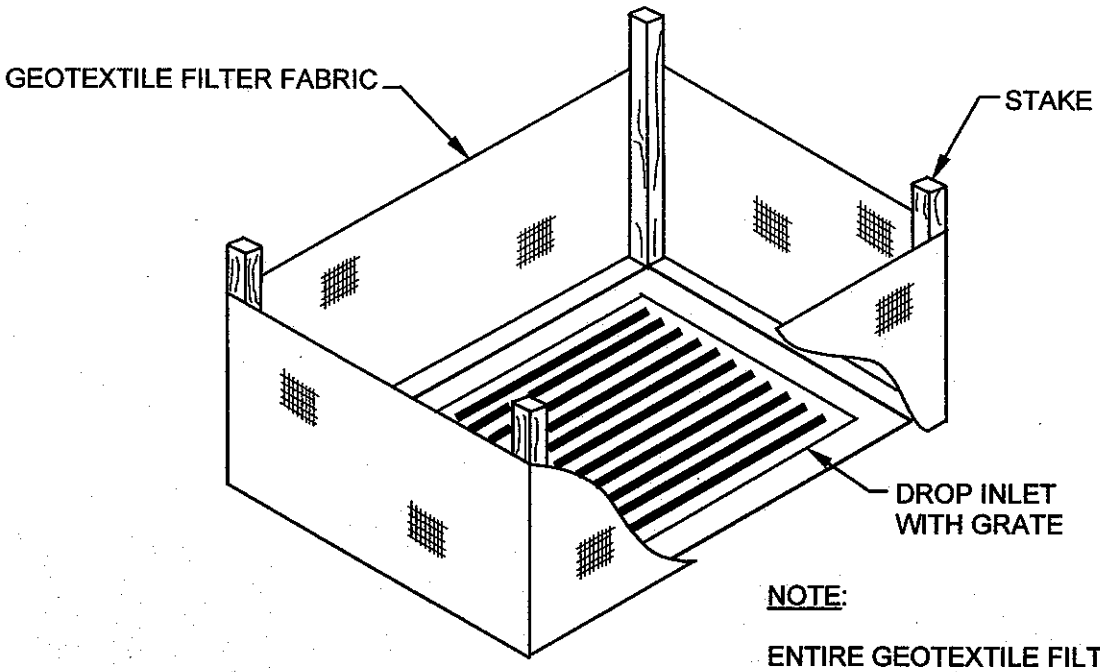
- Other proprietary devices may be used and shall be installed per manufacturer's recommendations.

Limitations

- Short-term flooding at a protected inlet will occur but must not become a traffic hazard.
- Drainage area limited to one acre or less.
- Straw bales shall not be used for inlet protection.
- Runoff on slopes may bypass protected inlets

Inspections and Maintenance

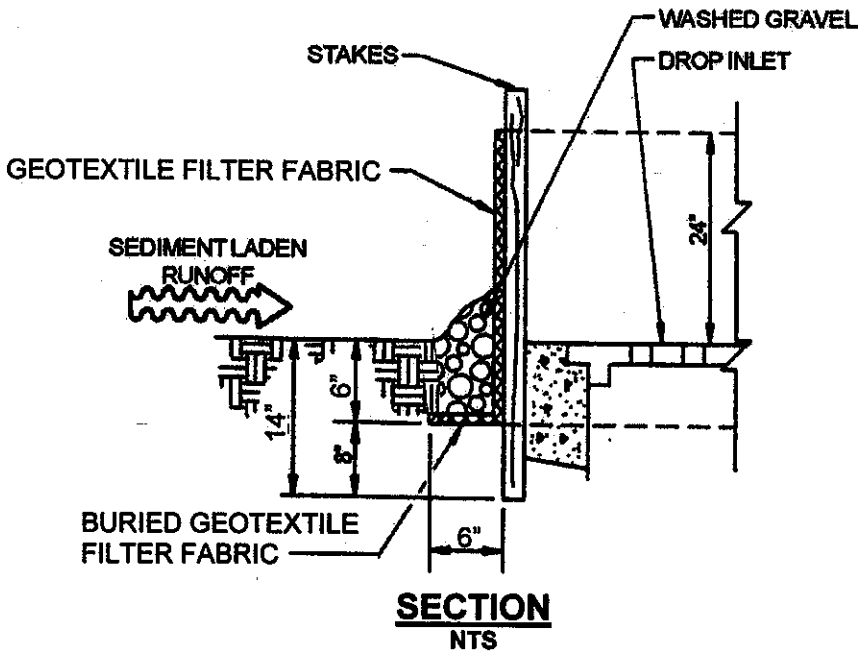
- Inspect weekly during dry periods as well as within 24 hours of any rainfall of 0.5 inch or greater which occurs in a 24-hour period and daily during periods of prolonged rainfall.
- Immediately replace clogged geotextile filter fabric or stone filters.
- Remove accumulated sediment when depth reaches half of the filter height or half of the sediment trap depth.
- Remove inlet protection after stabilization of upstream soils and sweeping of streets is completed. Properly dispose of trapped sediment.



NOTE:

ENTIRE GEOTEXTILE FILTER FABRIC NOT SHOWN FOR ILLUSTRATIVE PURPOSES.

PERSPECTIVE VIEW
NTS



SECTION
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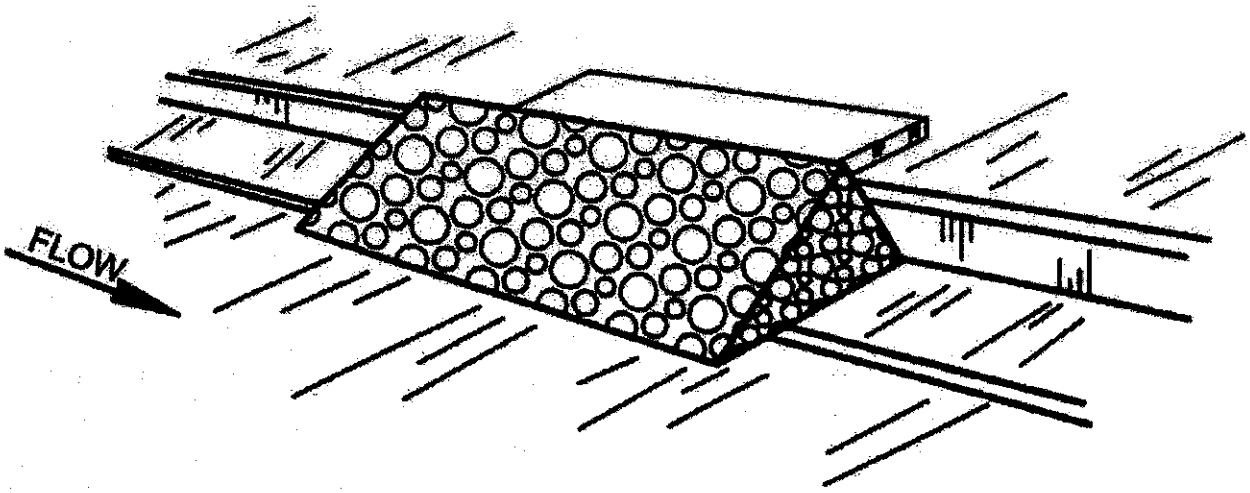
GEOTEXTILE FILTER FABRIC FENCE FOR DROP INLET FILTER

Source: Modified from CCH Best Management Practices Manual for Construction Sites in Honolulu, 1999.



PERSPECTIVE
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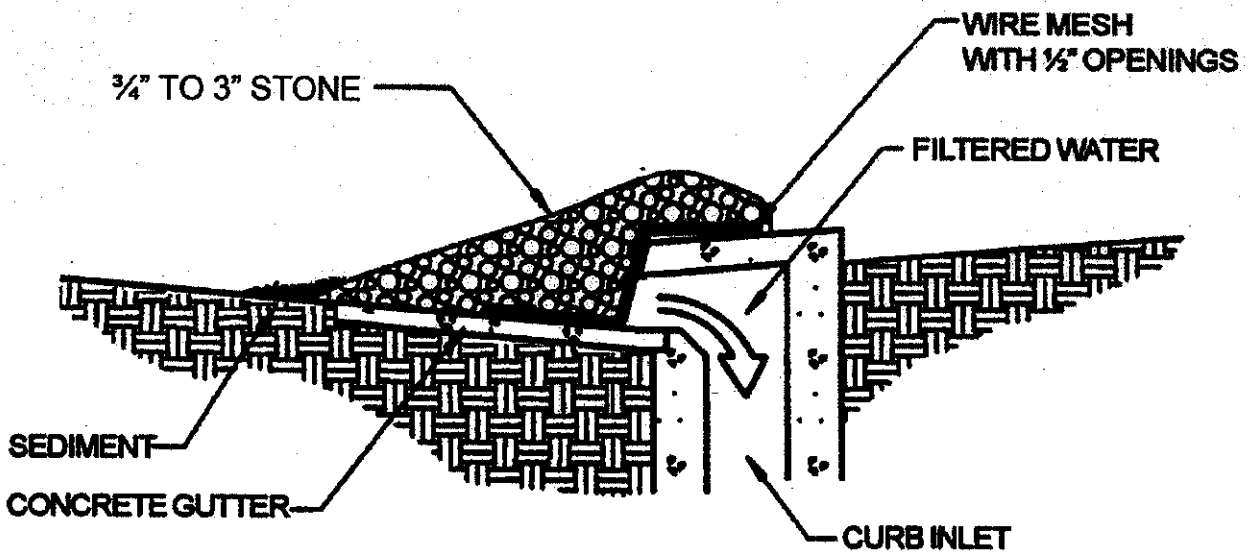

SECTION
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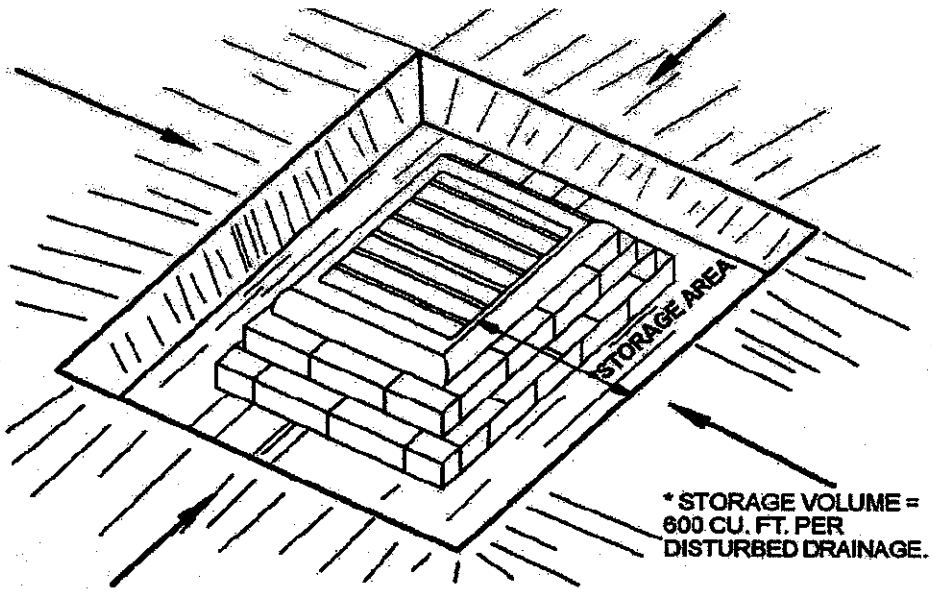
NOTE: NOT APPLICABLE TO AREAS WITH HIGH TRAFFIC VOLUMES.

STONE AND WIRE MESH FILTER FOR CRUB INLET

Source: CCH Best Management Practices Manual for Construction Sites in Honolulu, 1999.



PERSPECTIVE
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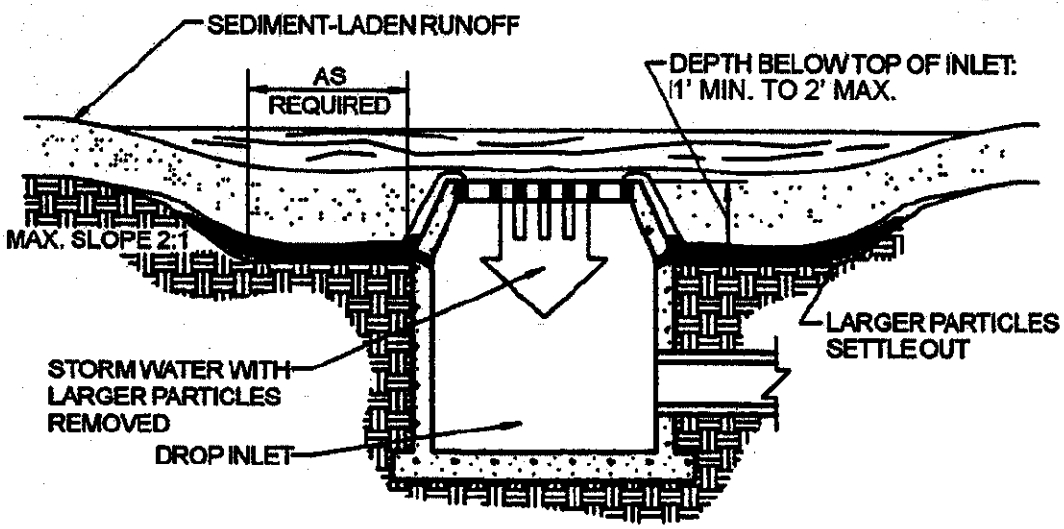

SECTION
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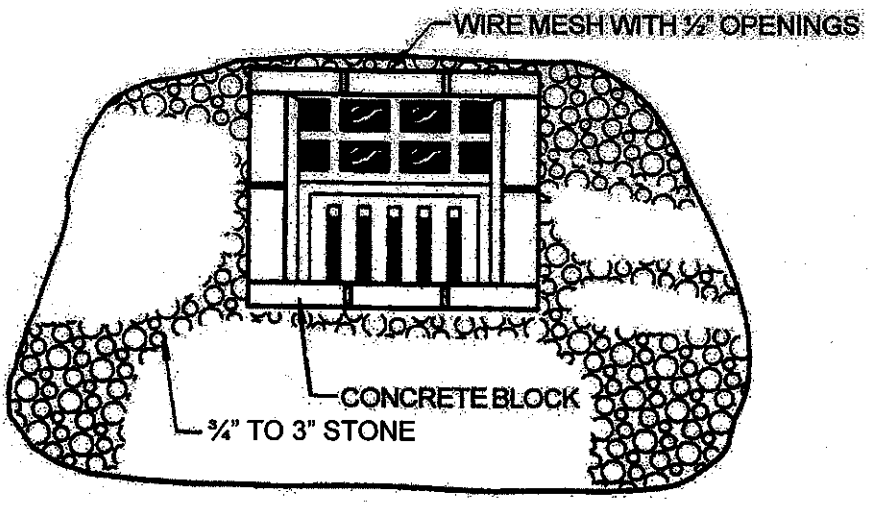
NOTE: THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE OVERFLOW CAPABILITY AND EASE OF MAINTENANCE ARE DESIRABLE.

EXCAVATED DROP INLET SEDIMENT TRAP

Source: CCH Best Management Practices Manual for Construction Sites in Honolulu, 1999.



PLAN
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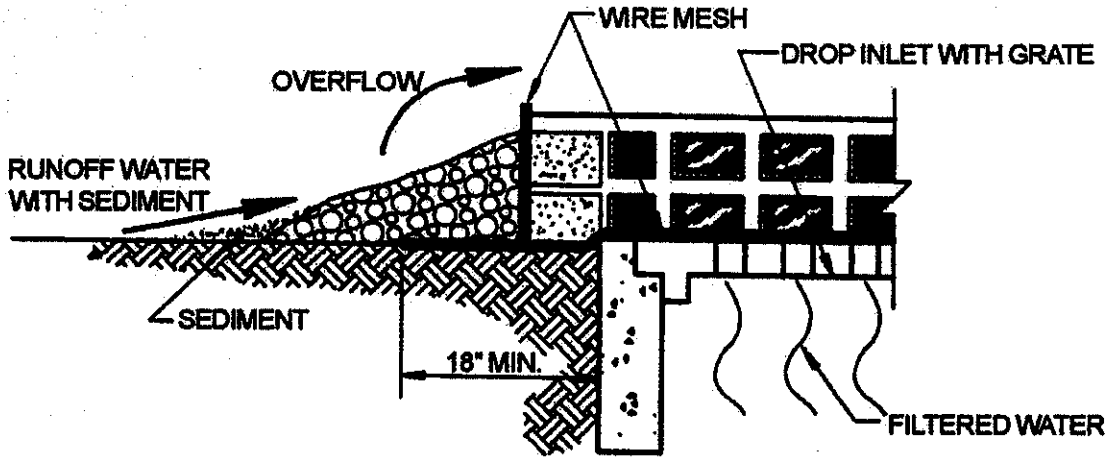

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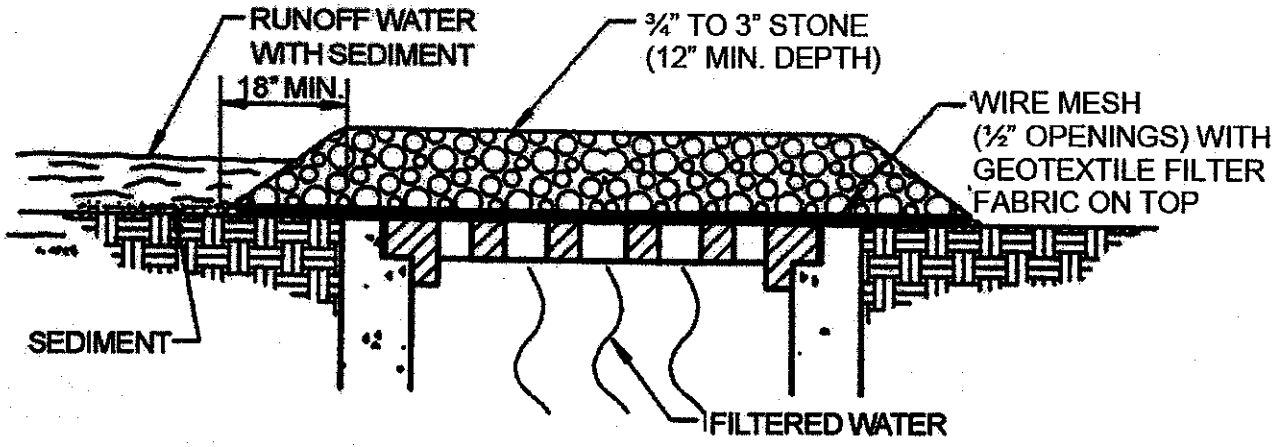
BLOCK AND STONE FILTER AT DROP INLET

Source: CCH Best Management Practices Manual for Construction Sites in Honolulu, 1999.



STONE AND WIRE MESH FILTER FOR DROP INLET
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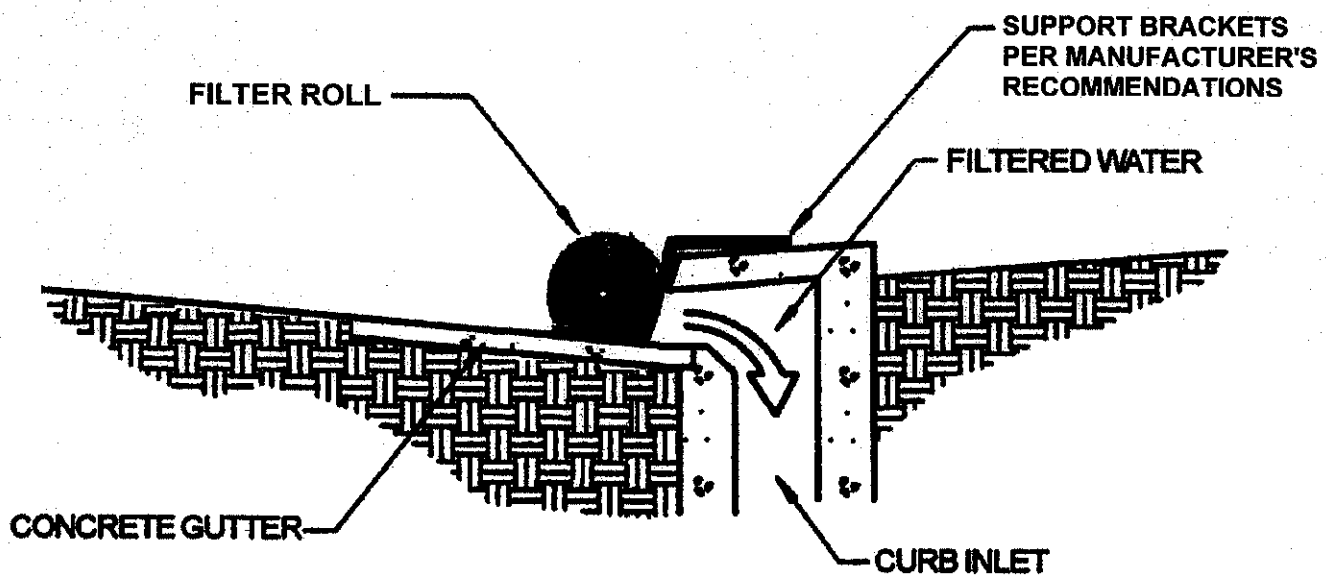

FILTER ROLL WITH SUPPORTS FOR CURB INLET
NTS

Source: CCH Best Management Practices Manual for Construction Sites in Honolulu, 1999.